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Program to Inspire Students in Prostate Cancer Research

PRINCIPAL INVESTIGATOR:

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<b>14. ABSTRACT</b> The overall goal of Project INSPIRE is to provide <u>continuum of opportunities</u> including didactic and meaningful research experience and training in basic, biomedical, clinical and/or population sciences research for promising undergraduate students enrolled at Florida A & M University (FAMU), who are at an important career-decision-making point, in a host institution such as the Moffitt Cancer Center (MCC), with an established record of achievement in prostate cancer research, that will lead to attracting this group into careers that focus on prostate cancer research. The objectives outlined for this project were completed in three years. As proposed, we recruited 4 students each of these three years from FAMU during the summer, who were each matched with their mentors and all completed the program as proposed. Twelve pilot projects and research reports were completed by the interns in the program and 9 scholarly abstracts were presented at a National scientific meeting. <b><u>83.3% of the participating project INSPIRE interns are currently in graduate or pursuing doctoral studies.</u></b> All 12 students have demonstrated interest in graduate study to continue their work with prostate cancer and efforts continue to enable this endeavor.				
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## **I. Introduction:**

The American Cancer Society estimates that 192,280 men will develop prostate cancer (CaP) in the United States in 2009, while 27,360 men will die from the disease.<sup>1</sup> Prostate Cancer (CaP) continues to be the most important worldwide cancer killer proven to disproportionately overburden men of African decent. Based on the World Health Organization (WHO)'s worldwide cancer data, West African men have much lower prostate cancer incidence and mortality compared to African American men. For example, compared to Nigerian men, African-American men are >10 times likely to develop prostate cancer and 3.5 times likely to die from the disease. For African American men, established risk factors for prostate cancer include age, ethnicity and family history of prostate cancer<sup>2</sup>. Autopsy studies and clinical findings support the argument that CaP exhibits more aggressive biological behavior in AA men than that observed in other populations. As recognized by the U.S. Department of Defense (DOD), to successfully address these challenges of disparities in prostate cancer incidence, mortality and morbidity, the number of Historically Black Colleges and Universities (HBCU) scientists who are trained as prostate cancer researchers need to increase. This is because, HBCU scientists, due to the mission of HBCU institutions, focus their health care research on disparities experienced by the minority population. More importantly, minorities traditionally trust HBCU researchers and are more likely to cooperate with them in addressing health issues in their community. In spite of recommendations to increase African American scientists in this field of research, with several training and career development programs established by the National Institute of Health (NIH) and DOD to increase the number of minority scientists, there is a gap in the early phases of the training pipeline, including the current prostate cancer education, training and research activities for undergraduate students at Florida A&M University (FAMU), a Historically Black Colleges/Universities (HBCU). There is thus a critical need to inspire and increase the number of young scientists from underserved groups and create a cadre of culturally sensitive well-trained scientists to improve research and ultimately contribute to reducing this disproportionate burden of prostate cancer incidence and mortality in African American men. Project INSPIRE will begin to address this weakness.

The overall goal of Project INSPIRE is to provide continuum of opportunities including didactic and meaningful research experience and training in basic, biomedical, clinical and/or population sciences research for promising undergraduate students enrolled at Florida A & M University (FAMU), who are at an important career-decision-making point, in a host institution such as the Moffitt Cancer Center (MCC), with an established record of achievement in prostate cancer research, that will lead to attracting this group into careers that focus on prostate cancer research. The objectives outlined for this project will be completed in three years.

## **II. BODY:**

The proposed undergraduate training program, Project INSPIRE, was designed to create and nurture opportunities and promote careers in prostate cancer research for aspiring and promising undergraduate students from FAMU, a HBCU. The program has created links between established scientists and aspiring undergraduate students at the junior level at FAMU, and will provide didactic and research experiences and training in basic, biomedical, clinical and population sciences research, specific to prostate cancer. Under the direction of Moffitt research faculty, students have worked in an area of study such as basic research or cancer control, and learn research skills while being exposed to an enriching scientific environment. Working with experienced investigators, scientists and physicians, the students planned, conducted and record scientific observations and studies, gaining experience in daily

research and learning to function independently as well as part of a team. Students attended seminars and interacted with the current members of internship programs – in Project LINK and SPARK, in addition to graduate and postdoctoral fellows. Because an important goal of the program was to facilitate students' connections to the next steps in a cancer research career, we made available and continue to keep students informed about career opportunities in conjunction with NCI's CURE program, graduate programs, other internships that will prepare them for graduate studies. In addition faculty and the PI of Project INSPIRE, who have worked closely with each of these students will serve as ambassadors and provide referral letters for students pursuing graduate studies and internship programs. Project INSPIRE office has served as a clearinghouse of information and have assisted all the interns with their future careers and academic pursuits. We continue to expect students to remain in contact with Moffitt Cancer Center for continued career opportunity enhancements.

There were no major technical difficulties encountered during the summer internship program pertaining to student conduct nor completion of the requirements of curriculum proposed nor from the faculty. Although these were summer months and a time when faculty take their vacations, we paired several of the faculty members with co-mentors that permitted continuous mentoring of interns during the entire summer. Each year, both students and participating faculty evaluations were conducted at the end of the internship program.

#### SUMMARY OF MAJOR RECOMMENDATIONS FROM STUDENTS:

##### **Accommodations:**

Based on the experience and feedback from the first year of the program, we changed the accommodation to a private student dormitory at the University of South Florida Campus with easy campus transportation for students to the Moffitt Cancer Center. These facilities offered better accommodations, recreation, networking and transportation facilities and fit the requirements of all students in years 2-3.

##### **Meal Service:**

Since the first year group had indicated that the food services in the dorms closed early, thus not permitting flexible dining, we did not purchase the meal plans at the dorms for years 2-3 and provided the meal allowance to students in addition to the stipends that would otherwise be provided for meal plans in the dorms. This change worked well and students were free to eat at the Cancer Center or in other dining facilities close to the campus where they preferred to, based on the time commitments for research activity.

##### **Educational Activity:**

On-line Didactic Programs and Grand rounds and other Center and University-wide seminars: The students had the opportunity to attend and participate in Center and University-wide as well as their individual research program-wide seminar series, in addition to the didactic interactive lesson plans provided to them. This provided an overall background and more specific understanding of prostate cancer disparity and need for further research in this area. We deleted the testing component of this session and focused on exposure of students to the didactic sessions offering them the knowledge of the most current concepts with regard to prostate cancer prevention, treatment, survivorship as well as health disparity.

**Camaraderie with other student interns at the Cancer Center:** The interns in the first year had an identity specific to Project INSPIRE, with specific colored t-shirts identifying this group. However, in years 2 and 3, the groups were integrated with the interns in the SPARK summer internship program at the Moffitt Cancer Center. The students of project INSPIRE found this opportunity more inclusive and were able to build relationships, integrate and network with other students from all over the country more fully than in previous years.

##### **Scope of work defined:**

Students accessed other faculty members not identified as mentors of this program during the internship program without the primary mentor's approval. This had

implication as to the time commitment and conduct and focus on the summer research project. In the future, we will provide our summer interns with more specific guidelines as to the scope of their work during the summer at Moffitt. These guidelines will be communicated to the interns at the beginning of the internship to ensure that while interactions with and mentorship by several faculty at the Cancer Center was encouraged, these activities must be communicated to and guided by the primary mentor.

#### MAJOR RECOMMENDATIONS FROM FACULTY:

##### **Seek and recruit from a larger pool of students to select the summer interns from FAMU:**

Dr. Kumar completed 6 information sessions at FAMU in January 2007 and 2008 on the FAMU campus focusing on several majors- biology, chemistry, pharmacy, social sciences, and nursing and environmental sciences programs. Although the PI initiated advertising and communication with department chairs at FAMU in early January, visited FAMU, working closely with the FAMU faculty coordinator, Dr. Odedina at FAMU providing information sessions, utilizing Project INSPIRE alumni as ambassadors to market the program, we continued to face the challenge to recruit a large pool of students who were willing to spend the summer in Tampa in subsequent years. An average of only 6-8 students applied for the internship program in years 2 and 3 from which we selected 4 students.

### **III. Key Research Accomplishments:**

Based on the goals of Project INSPIRE, the following objectives were developed and met during this period:

(a) Developed a didactic and research training program that specifically inspires, creates opportunities and promotes careers in prostate cancer research for aspiring undergraduate students drawing on the elements of mentoring, collaboration and networking;

#### **TASKS:**

**Months 1-2:** Year only. Years 2-3: Revisions to the modules.

##### **Development of Didactic Curriculum:**

Faculty met and outlined content of Didactic curriculum

Assigned content areas to experts in the field

Finalized didactic training curriculum & evaluation

Content of modules due in project office and evaluation at the end of 6 weeks

Completion of the development of the didactic modules and made available for Project INSPIRE interns (Table1).

Table 1: FORMAL FAMU INTRODUCTORY DIDACTIC TRAINING SESSION

Module #	Module Title	Moffitt Instructor
1	Fundamental and Principles of Prostate Cancer Prevention	Dr. Nagi Kumar
2	Fundamental and Principles of Prostate Cancer Prevention	Dr. Clement Gwede
3	Socio-psychological factors related to Prostate Cancer – Implications in screening, prevention and treatment	Dr. Susan Thomas Vadaparampil

4	Diagnosis and Treatment of Prostate Cancer	Dr. Meyer Fishman
5	Cancer, Culture and Literacy: Implications in the African American Population	Dr. Cathy Meade
6	Genetic Markers and Polymorphisms in Prostate Cancer	Dr. Wenlong Bai
7	Fundamental and Principles of Prostate Cancer Treatment	Dr. Julio PowSang
8	Molecular Targets – Prostate Cancer Biology	Dr. Linda Mora-Diaz
9	Ethical Issues in Research/Research Designs/Methods	Dr. Nagi Kumar/ Dr. Craig Beam
10	Preparing Successful Grant Applications	Dr. Nagi Kumar

**Months 1-5 of each year from 2006-2008:**

**Publicized/Marketed Summer Internship Program at FAMU** by PI from Moffitt Cancer center and Coordinator from FAMU meeting with potential students at FAMU campus and publicizing the program opportunity.

Content covered:

- Program philosophy, goal and objectives
- Application Requirements
- Reviewed Applications
- Interviewed potential students
- Selected students & matched with mentors
- Finalized and informed candidates by a formal letter
- Received acknowledgement of acceptance from students
- Sent information package to students
- Dates-orientation/program
- Mentor/contact information
- Accommodation information and contracts signed
- Tampa city/MCC/University campus information mailed to students

**Months 3-5 of each year from 2006-2008:**

**Recruitment of Faculty to serve as Mentors for Program:**

- Sent letters to faculty actively involved in prostate cancer research at Moffitt Cancer Center to invite participation as mentors for the summer training and internship program
- Identified and finalized a minimum of 4-6 mentors each summer to be matched up with the students
- Met with Advisory Committee for final approval of curriculum and list of mentors.

**Mentors Selected:**

**(a)Nagi Kumar, Ph.D.(Program Director)**

Director, Department of Nutrition Research  
Professor, Department of Oncological Sciences, Division of Population Sciences, Moffitt Cancer Center at the University of South Florida College of Medicine

**(b) Paul Jacobsen, Ph.D.**

Program Leader, Health Outcomes & Behavior  
Professor, Department of Oncological Sciences, Division of Population Sciences, Moffitt Cancer Center at the

University of South Florida College of Medicine

(c) **Cathy D. Meade Ph.D, R.N., F.A.A.N.,**

Professor, Department of Oncological Sciences, Division of Population Sciences, Moffitt Cancer Center at the

University of South Florida College of Medicine

(d) **Dr. Clement Gwede, Ph.D.**

Assistant Professor, Department of Oncological Sciences, Division of Population Sciences, Moffitt Cancer Center at the

University of South Florida College of Medicine

(e) **Dr. Susan Vadaparampil, Ph.D.,**

Associate Professor, Department of Oncological Sciences, Division of Population Sciences, Moffitt Cancer Center at the

University of South Florida College of Medicine

(f) **Dr. Srikumar Chellappan, Ph.D.**

Professor, Department of Oncological Sciences, Moffitt Cancer Center at the University of South Florida College of Medicine

Drug Discovery Program

(g) **Dr. Brian Rivers, Ph.D.,**

Assistant Professor in the Health Outcomes and Behavior Program at H. Lee Moffitt Cancer Center

(h) **Dr. Aslam Kazi, Ph.D./**

Assistant Professor, University of South Florida,

Department of Interdisciplinary Oncology, College of Medicine Drug Discovery Program

(i) **Jong Parks., Ph.D.** Associate Professor, Risk Detection and Prevention, Department of Oncological Sciences, Moffitt Cancer Center at the University of South Florida College of Medicine

#### **Month 4 of each year from 2006-2008**

##### **Orientation of Faculty Mentors**

Met & Oriented mentor/faculty from Moffitt and Faculty Advisor from FAMU

Curriculum

Program Content

List of interns for the year and Biography

Location of interns at MCC/phone/e-mail/Housing

Assignment/Calendar

Conduct Guidelines

Institutional Mandatory education on safety, ethical conduct of human research, cultural competency.

#### **Months 5-8 each year from 2006-2009:**

Active Project INSPIRE internship program:

(b) Placed 4 undergraduate students each year during the months of June –August each summer from 2006-2008 (Table 2) to total 12 students in a peer-reviewed funded research environment designed to foster learning, provide positive researcher/student interactions, and cultivate an interest in a prostate cancer research career.

Table: 2 The Following Candidates were selected from FAMU to participate as the Class of Summers 2006 -2008 in Project INSPIRE and matched with mentors/Research Topics:

<b>FAMU</b>	<b>Student</b>	<b>Interns</b>	<b>Moffitt Faculty Mentors</b>	<b>Research Topic</b>
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**2006**

Carrol, Jarrod A.	Cathy D. Meade Ph.D, R.N., F.A.A.N.,	An exploratory study to evaluate and increase prostate cancer education and awareness among African American men
Harrison, Lakeitha V.	Dr. Srikumar Chellappan, Ph.D. and Dr. Nagi Kumar, Ph.D.	EGCG Induced Cell Death in Prostate Cancer Cells
Lightbourn, Alrena V.	Dr. Clement Gwede, Ph.D.	Perceived barriers to prostate cancer screening among black men residing in Hillsborough county, FL
Oniyelu, Matilda M.	Paul Jacobsen, Ph.D. and Susan Vadaparampil, Ph.D.	Impact of LHRH Agonists on Cognitive Function in Prostate Cancer

<b>FAMU</b>	<b>Student</b>	<b>Interns</b>	<b>Moffitt Faculty Mentors</b>	<b>Research Topic</b>
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Lori Gordon	Cathy D. Meade Ph.D, R.N., F.A.A.N.,	It Takes Two: Beauty and the beHOLDen This exploratory study assesses the feasibility of using African American beauty salons to promote prostate cancer education and awareness
Maclin Williams	Dr. Aslam Kazi, Ph.D. and Dr. Nagi Kumar,Ph.D. Dr. Said Sebti's Lab	Mechanisms of Cellular Apoptotic Induction Caused by Polyphenon E in Prostate Cancer Cell Lines.
Olivia Marks	Dr. Clement Gwede, Ph.D.	Racial and Geographical Differences in the Quality of Life (QOL) in Men Treated for Localized Prostate Cancer
Andrew Dixon	Dr. Aslam Kazi, Ph.D. and Dr. Nagi Kumar,Ph.D. Dr. Said Sebti's Lab	Polyphenon E potentially inhibits proteasome activity in human Multiple myeloma cells.

increases p27 and induces cell cycle arrest.

<b>FAMU 2008</b>	<b>Student</b>	<b>Interns</b>	<b>Moffitt Faculty Mentors</b>	<b>Research Topic</b>
	Tabetha Frazier		Clement Gwede, Ph.D.	Prostate cancer screening decision aide project in the African American Males
	Jeneba Kamara-Bayoh		Brian Rivers, Ph.D.	What are the most salient quality of life issues for prostate cancer survivors and their spouses for localized prostate cancer in the context of behavioral well-being? (I.e. lifestyle, diet, and alcohol and tobacco consumption)
	Jenelle Norton		Nagi Kumar, Ph.D.	Results of a Pilot Study comparing Lifestyle Factors among American Men living in Nigeria and immigrants to the US from Nigeria
	Mashunte Glass		Jong Parks, Ph.D.	Association between a SNP in IL-16 and MINPP1, and recurrence of Prostate Cancer

**Activities completed prior to start of Summer Internship/Training Program:**

Orientation- badges, e-mail addresses, introduction to mentor/policies & procedures  
 Input student information into the tracking system  
 Begin research experience  
 Begin monthly seminars  
 Begin didactic session on-line  
 Complete pilot study  
 Presentation on Research day  
 Complete on-line exam /evaluation for completion of didactic session

(c) Create a series of support networks/activities to assist both students and mentors in their role by utilizing cancer center, university, community and national resources.

**TASKS:**

Month 9                      Conduct on-going evaluation-  
                                     FAMU students  
                                     Program

Mentor evaluation  
 Monitor & track students  
 Provide information regarding follow up  
 Seminar presentation of pilot study  
 Report in peer-review journals  
 Other presentations and publications

Month 10-12    Review and report findings of evaluation to Advisory committee  
 Review and revise program/curriculum  
 Continue to track students- monthly e-mails/provide information on pertinent seminar/continuing education information.  
 Access to seminars and lectures at Moffitt Cancer Center  
 Invite Alumni to participate in Research day annually  
 E-Mails regarding accomplishments of participants and progress in cancer research  
 Provide recommendation letters/guidance/counseling to students pursuing graduate studies or careers in health-related field.

**September 2008- January 2009 and present**

Program evaluation  
 Follow up with students regarding application to graduate school  
 Information to students about research internship & education opportunities  
 Information to students regarding updates/progress  
 Provide recommendation letters/guidance/counseling to students pursuing graduate studies or careers in health-related field.

**IV. Reportable Outcomes:**

The reportable outcomes of Project INSPIRE for year 2006-2008 were as follows:

(1) We have increased interest in prostate cancer research and the problems of health disparities as indicated by increase in the number of interested students each year to be admitted to this program. As proposed, we recruited 12 undergraduate and 1 rising graduate students from FAMU during the summers from 2006-2008, who were matched with their mentors and all completed the program as proposed. (Table 1.) All 12 students presented their research at the American Cancer Society/H. Lee Moffitt Cancer Center Summer Internship Programs Research Day at the completion each summer.

a. Lightbourn, Alrena V. Barriers to Prostate Cancer Screening Among Black Men Residing in Hillsborough County, Florida. Research Day – American Cancer Society/H. Lee Moffitt Cancer Center Summer Internship Programs Research Day (July 31, 2006).

b. Carrol, Jarrod A. An exploratory study to evaluate and increase prostate cancer education and awareness among African American men. American Cancer Society/H. Lee Moffitt Cancer Center Summer Internship Programs Research Day (July 31, 2006).

c. Harrison, Lakeitha V. EGCG Induced Cell Death in Prostate Cancer Cells. American Cancer Society/H. Lee Moffitt Cancer Center Summer Internship Programs Research Day (July 31, 2006).

d. Oniyelu, Matilda M. Impact of LHRH Agonists on Cognitive Function in Prostate Cancer. American Cancer Society/H. Lee Moffitt Cancer Center Summer Internship Programs Research Day (July 31, 2006).

e. Mechanisms of Cellular Apoptotic Induction Caused by Polyphenon E in Prostate Cancer Cell Lines. Maclin Williams, Project INSPIRE intern  
Mentor: Dr. A. Kazi. Research Day, Moffitt Cancer Center at the University of South Florida College of Medicine, August 3, 2007.

f. Polyphenon E potently inhibits proteasome activity in human Multiple myeloma cells, increases p27 and induces cell cycle arrest. Andrew Dixon, Mentors: Dr. A. Kazi & Dr. N. Kumar. Research Day, Moffitt Cancer Center at the University of South Florida College of Medicine, August 3, 2007.

g. Racial and Geographical Differences in the Quality of Life (QOL) in Men Treated for Localized Prostate Cancer, Olivia Marks, Research Day, Moffitt Cancer Center at the University of South Florida College of Medicine, August 3, 2007.

h. It Takes Two: Beauty and the beholden. Lori Gordon. Research Day, Moffitt Cancer Center at the University of South Florida College of Medicine, August 3, 2007.

i. What are the most salient quality of life issues for prostate cancer survivors and their spouses for localized prostate cancer in the context of behavioral well-being? Jeneba. Bayoh-Kamara.

j. Results of a Pilot Study comparing Lifestyle Factors among American Men living in Nigeria and immigrants to the US from Nigeria. Jenelle Norton

k. Association between a SNP in IL-16 and MINPP1, and recurrence of Prostate Cancer. Mashunte Glass.

l. Prostate cancer screening decision aide project in the African American Males Tabetha Frazier.

(2) Thus far, 12 pilot projects completed by the interns in the program (Appendix I- Presentations) have contributed to their primary affiliated research programs and served as preliminary studies in this area. Twelve research reports of the work completed is enclosed. (Appendix II)

**(3) Thus far, we have 5 scholarly paper presentations at State-wide or National Scientific meetings by the interns:**

a. Lightbourn, Alrena V Barriers and Motivations to Prostate Cancer Screening Among Black Men Residing in Hillsborough County, Florida. Florida A&M University 2006 Research Forum (Nov 3, 2006). Poster Competition (3<sup>rd</sup> Place).

b. Lightbourn, Alrena V. Graduate Seminar: Implementation of Behavioral Research Methods to Evaluate Psychosocial Factors Influencing the Decision for Prostate Cancer Screening among Black Men from Hillsborough County, Florida. Florida A&M University (Oct 12, 2006).

c. Lightbourn, Alrena V Barriers and Motivations to Prostate Cancer Screening Among Black Men Residing in Hillsborough County, Florida. Proceedings of the 2007 Society of Behavioral Medicine Annual Meeting, March 21-24<sup>th</sup>, 2007, Washington D.C.

d. Racial and Geographical Differences in the Quality of Life (QOL) in Men Treated for Localized Prostate Cancer, Presented by: Olivia Marks, IMPaCT: Innovative Minds in Prostate Cancer Today, Atlanta, GA, 2007.

e. It Takes Two: Beauty and the beholden. Presented by: Lori Gordon, IMPaCT: Innovative Minds in Prostate Cancer Today, Atlanta, GA, 2007.

**(4) In addition, the PI(Kumar NB) of the internship program also presented the program and success at the following National Meetings:**

- a. **Kumar NB.** Collaborative Partnership Panel. Proceedings of Department of Defense - The Innovative Minds in Prostate Cancer Today. HBCU Collaborative Partnership Award (CPA). Proceedings of the Innovative Minds in Prostate Cancer Today - IMPaCT Meeting, Atlanta, Georgia. 2007 September 5-8.
- b. **Kumar N,** Meade C, Jacobsen P, Gwede C and Odedina F. Project INSPIRE-HBCU :Undergraduate Collaborative Summer Training Program to Inspire Students in Prostate Cancer Research Proceedings Innovative Minds in Prostate Cancer Today - IMPaCT Meeting, Atlanta, Georgia. 2007 September 5-8.
- c. **Kumar NB.** Training the Next Generation. Project Inspire–HBCU Undergraduate Collaborative Summer Training Program to Inspire Students in Prostate Cancer Research. Proceedings of Department of Defense -The Innovative Minds in Prostate Cancer Today, IMPaCT Meeting, Atlanta, Georgia. 2007 September 5-8.
- d. **Kumar NB** & Odedina F. Develop and Maximize Effective Collaborations Department of Defense (DOD) Breast Cancer Research Program (BCRP) Era of Hope 2008 Meeting. June 2008.

(5) All 12 students who completed the internship have continued to engage in networking with accomplished prostate cancer researchers and leaders at MCC, and most of them have continued to pursue their education and work in the public health, medicine arena (Table 3)

(6) All 12 students have demonstrated interest in graduate study to continue their work with prostate cancer by applying to enroll in graduate studies. (Table 3). The success of our program was measured in the accomplishment of the award to inspire students to pursue graduate studies in healthcare related fields and continue to work towards the goal to eliminate health disparity. One(1) of 12 students is currently in a Medical program, four(33.3%) in doctoral programs; six(6) or 50% in graduate programs and 1 is currently seeking admission into a graduate program and one student was lost to follow up. **Thus, 83.3% of the participating project INSPIRE interns are currently in graduate or pursuing doctoral studies.**

**Table 3: Current Status of Summer 2010 Interns;  
FAMU Student Interns**

<b>FAMU Student Interns</b>	<b>Mentors</b>	<b>Current Status, January 2010</b>
Carrol, Jarrod A.	Cathy D. Meade Ph.D, R.N., F.A.A.N.,	Medical School-Howard University College of Medicine, Washington DC
Harrison, Lakeitha V.	Dr. Srikumar Chellappan, Ph.D. and Dr. Nagi Kumar, Ph.D.	Graduate school for Pharmacology/Public health Florida A&M
Lightbourn, Alrena V.	Dr. Clement Gwede, Ph.D.	Doctoral student- Pharmacology/Toxicology
Oniyelu, Matilda M.	Paul Jacobsen, Ph.D. and Susan Vadaparampil, Ph.D.	Graduate school for Pharmacology/Public health Florida A&M, University of South Florida and Florida International University

**Current Status of Summer 2007 Interns;  
FAMU Student Interns**

<b>FAMU Student Interns</b>	<b>Mentors</b>	<b>Current Status, January 2007</b>
Maclin Williams	Aslam Kazi, Ph.D, Drug Discovery	Graduate Student in Molecular & Cellular Biology
Andrew Dixon	Aslam Kazi, Ph.D & Nagi Kumar, Ph.D. Chemoprevention/Drug Discovery.	Applying for Master's program in Public Health.  Completed BS in Biochemistry
Olivia Marks	Clement Gwede, Ph.D.	Graduate student , Major: Economic, Social, and Administrative Pharmacy
Lori Gordon	Cathy Meade, Ph.D.	Pharm D. Program, Florida A & M University

**Current status of Summer 2008 Interns:**

Tabetha Frazier	Clement Gwede, Ph.D.	Master in Social Work program at Florida A&M University MPH. in Public Health.
Jeneba Kamara-Bayoh	Biran Rivers, Ph.D.	
Jenelle Norton	Nagi Kumar, Ph.D.	Unable to reach student.
Mashunte Glass	Jong Parks., Ph.D.	Ph.D. Pharmacology & Toxicology

We will continue to track Research Presentations/ student scientific presentations, papers, projects and refereed publications of students/mentors in collaboration. We will

also determine the number of students who actually continue in a science field and progress through to a prostate cancer research career. We will continue to track students even after they leave our program to assess and assist with their career path as we have done these past months. Each student will receive yearly updates regarding opportunities available via e-mail. Additionally, all past participants will be invited to annual research celebration events to further share in their progress and success. In sum, we will use both quantitative and qualitative data to provide further evidence of Project INSPIRE 's positive effects.

There was a significant public interest in the program, which was widely covered by the media each summer. Since the completion of the programs, the interest at FAMU among undergraduate and graduate students in health disparity research has increased significantly. Several faculty members and students, including alumni attended the Research Day presentations each year.

#### **V. Conclusions:**

There continues to be a disproportionately high burden of prostate cancer incidence mortality and morbidity in African American men. In order to address the disparities of prostate cancer occurrence and survival among medically underserved minorities, we have designed the Project INSPIRE research-training program for FAMU undergraduate students. Theory and empirical evidence suggest that the development of a focused training program grounded in mentoring, collaboration and networking will assist in career development of aspiring scientists. Our mission at the Cancer Center is to create and perpetuate an environment that supports diversity and equity so that we may better serve our community in addressing their needs for cancer care and education. Thus, Project INSPIRE represents a strong response to an urgent need to achieve parity in the number of underserved cancer scientists in the training pipeline of prostate cancer research. The already established training and research collaboration between MCC and FAMU, coupled with the expanding research programs and resources of the Moffitt Cancer Center, will create an exciting synergy and environment that should make Project INSPIRE continue to thrive. The career trajectory of minority students and the research capacity of faculty and students at both institutions can be influenced significantly through this collaboration.

**Thus, 83.3% of the participating project INSPIRE interns are currently in graduate or pursuing doctoral studies.** Based on the experience with this internship program funded by DOD, Dr. Kumar (PI) is a key participant in a collaborative Project grant (NIH 1 P20 MD003375-01) funded by the NIH to the University of South Florida and Moffitt Cancer Center that has now established a Center for Equal Health. Dr. Kumar now serves as the Core Leader of the Research Education and Training and the Core leader for the Research Core for the Center for Equal Health, and is currently the PI for a funded to study the safety and effectiveness of isoflavones to prevent progression of prostate cancer- comparing African American and Caucasian men.

Project INSPIRE continues to thrive and is now funded through the Research Education and Training Core of this NIH funded Project grant and will recruit minority undergraduate students from University of South Florida. In addition, this grant will also fund 1 post doctoral candidate, offer 1 career catalyst award to a junior faculty member- all to conduct research to eliminate health disparity.

Account # NIH 1 P20 MD003375-01-Research study PI Kumar NB  
 Dates: 04/01/2009-03/31/2014  
 Source: NIH  
 Title: Phase II Clinical Trial of Purified Isoflavones in Prostate Cancer: Comparing Safety, Effectiveness and mechanism of action between African American and Caucasian men.  
 Percentage of Effort: 20%  
 Purpose of Research: To compare the efficacy and safety of an intervention with purified isoflavone in modulating intermediate endpoint biomarkers of prostate cancer progression between African American and Caucasian men diagnosed with clinically localized prostate cancer.

Account # NIH 1 P20 MD003375-01 Core Leader: Kumar NB  
 Dates: 04/01/2009-03/31/2014  
 Source: NIH  
 Title: Research Core  
 Percentage of Effort: 5%  
 Role in Project: Core Co-Leader

Account # NIH 1 P20 MD003375-01 Core Leader: Kumar NB  
 Dates: 04/01/2009-03/31/2014  
 Source: NIH  
 Title: Research Education and Training Core  
 Percentage of Effort: 5%  
 Role in Study: Core Leader

Dr. Kumar collaborating with faculty at FAMU also received the following award to evaluate the barriers and facilitators of clinical trial participation among African American men:

Aims: Account # 1R01CA122060-Supplement KUMAR (PI)  
 Dates: 08/01/2008-01/2/2010  
 Source: NIH/NCI  
 Title: A Phase II Clinical trial of Polyphenon E in Prostate Cancer: Minority Supplement  
 Role in Study: Principal Investigator/Mentor  
 Purpose of Research: To evaluate the barriers and facilitators of clinical trial participation among African American men.  
 Training: Minority candidate: Folake Odedina, Ph.D. Senior academic faculty in research training.

**VI. References:** None.